

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB2004/004432

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12Q1/68

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, BIOSIS, EMBASE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	ROSENTHAL A ET AL: "DNA SEQUENCING BY SEQUENTIAL ADDITION OF TAGGED NUCLEOTIDES" MEETING ON GENOME MAPPING AND SEQUENCING, COLD SPRING HARBOR, US, 1993, page 222, XP000197805 page 222	1-26,41, 54-57
X	US 6 087 095 A (ROSENTHAL ET AL) 11 July 2000 (2000-07-11) claims 1,2,4,9,11-13 column 6, paragraph 1 - column 7 column 8, paragraph 2 column 9, paragraph 3 ----- -/-	1-26,41, 54-57

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

31 January 2005

Date of mailing of the international search report

04 05. 2005

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 96/27025 A1 (RABANI, ELY, MICHAEL) 6 September 1996 (1996-09-06) claims 7,9,10 page 5, paragraph 4 - page 7, paragraph 1 page 40 -----	1-26,41, 54-57
X	US 2003/013101 A1 (BALASUBRAMANIAN SHANKAR) 16 January 2003 (2003-01-16) claim 1 paragraphs [0007], [0010] - [0014], [0022], [0023], [0030], [0034] -----	1-26,41, 54-57

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Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

4-26 (completely); 1-3, 41, 54-56 (partially)

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-3 (partially), 4-26 (completely), 41 (partially), 54 to 56 (partially)

A method of sequencing a target polynucleotide comprising the steps of:

- (a) carrying out template derived nucleotide synthesis utilising a labelled nucleotide;
- (b) detecting the presence or absence of said labelled nucleotide
- (c) replacing said labelled nucleotide with an unlabelled nucleotide; and
- (d) repeating steps a) to c)

2. claims: 1-3 (partially), 27-40, 42-47 (completely), 41 (partially)

A method of sequencing a target polynucleotide comprising the steps of:

- (a) carrying out template derived nucleotide synthesis by ligating a labelled oligonucleotide to a primer annealed to said target polynucleotide;
- (b) detecting the presence or absence of said labelled oligonucleotide
- (c) replacing said labelled oligonucleotide with an unlabelled oligonucleotide; and
- (d) repeating steps a) to c)

3. claims: 48, 49 (completely)

Method of comparing two or more polynucleotide sequences.

4. claim: 50 (completely)

Method of resolving ambiguities in a polynucleotide sequence.

5. claims: 51, 52 (completely)

Method of sequencing mRNA.

6. claim: 53

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

A method of sequencing a target polynucleotide comprising the steps of:
 (a) treating said target nucleotide with an intercalating dye;
 (b) extending a primer annealed to said target polynucleotide utilising a nucleotide labelled with a label which acts as a FRET partner to said DNA intercalating dye;
 (c) detecting the presence or absence of said nucleotide by means of an imaging technique that utilises FRET; and
 (d) repeating steps a-c;
 wherein steps (a) and (b) can occur in any order.

7. claim: 57 (completely)

A method of sequencing a target polynucleotide comprising the steps of:
 (a) carrying out template derived nucleotide synthesis utilising a nucleotide labelled with a FRET partner and at least one other polymerisation reaction component labelled with a FRET partner;
 (b) determining the nucleotide incorporated by detecting FRET interactions; and
 (c) repeating steps (a) and (b).

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 6087095	A	11-07-2000	AT 159766 T	15-11-1997
			AU 4020893 A	18-11-1993
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			DE 69314951 D1	04-12-1997
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			EP 1218543 A2	03-07-2002
			WO 0123610 A2	05-04-2001
